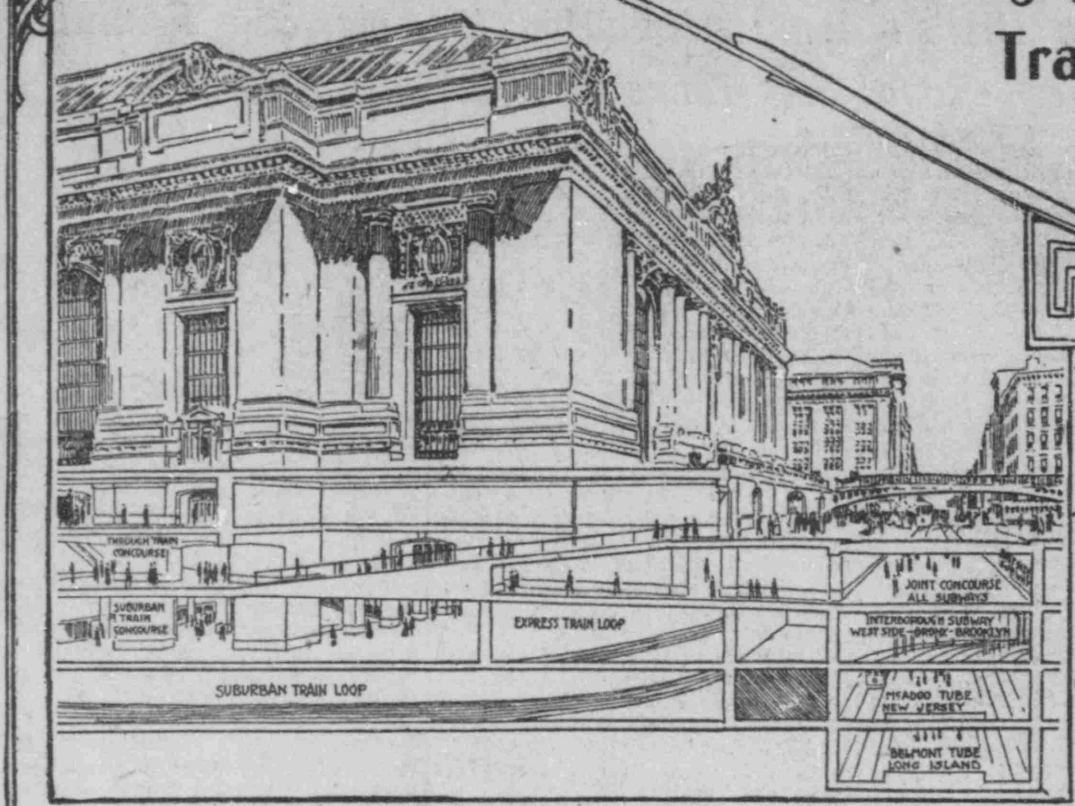


THE GREATEST RAILROAD TERMINAL in the WORLD

The New Grand Central's Group of Magnificent Buildings; the Biggest Passenger Traffic Center on the Globe



SUBWAY CONNECTIONS AT THE TERMINAL

At a cost of one hundred and eighty millions of dollars the old Grand Central—the busiest travel center in America—in the heart of New York city, is being enlarged and rebuilt on a tremendous scale without impeding for a moment the movement of the seven hundred trains that carry sixty thousand passengers in and out of it every day. When this marvel of engineering skill is completed, eighteen months from now, it will be by far the greatest railway passenger terminal in all the world. No other railroad gateway in existence or projected is half as large. These millions of dollars are being spent primarily for the safety, comfort and convenience of travelers. The new Grand Central will be the eastern terminus of the dozen noted lines that, stretching north and east and west for more than thirteen thousand miles, form the New York Central System.

For more than five years an army of men has been at work night and day with batteries of rock drills and squadrons of steam shovels widening and deepening the acres of yards in the old terminal. The greater part of this work is now done. Nearly three-fourths of the wonderful two-storied system of tracks, covering seventy acres below the street level, are in operation. On the Lexington Avenue side some of the group of massive terminal buildings—a splendidly equipped "temporary" station, the general offices of the railroad companies and the branch post office—are occupied and in active use. The old Grand Central Station that has been familiar to nearly two generations of travelers is being demolished and by autumn the main building of the magnificent terminal that is to occupy its site will begin to shoot upward.

Altogether this vast gateway to America in the heart of the metropolis will cover a space of about twenty city blocks. One feature of it alone—the waiting-rooms for passengers—will have a total area of more than six and a half acres. The thirty-two miles of tracks will be roofed over on the level with the streets and will be covered by a group of magnificent and monumental buildings unequalled in beauty by any city in the world. Some of these structures will be used for station purposes; others will be devoted to commerce and others to the arts. The new terminal will be different from any railroad station in existence. All its complicated machinery—the signals, the tracks and the hundreds of electric trains—will be below the street level and less in evidence than the heating and lighting plant of a great hotel.

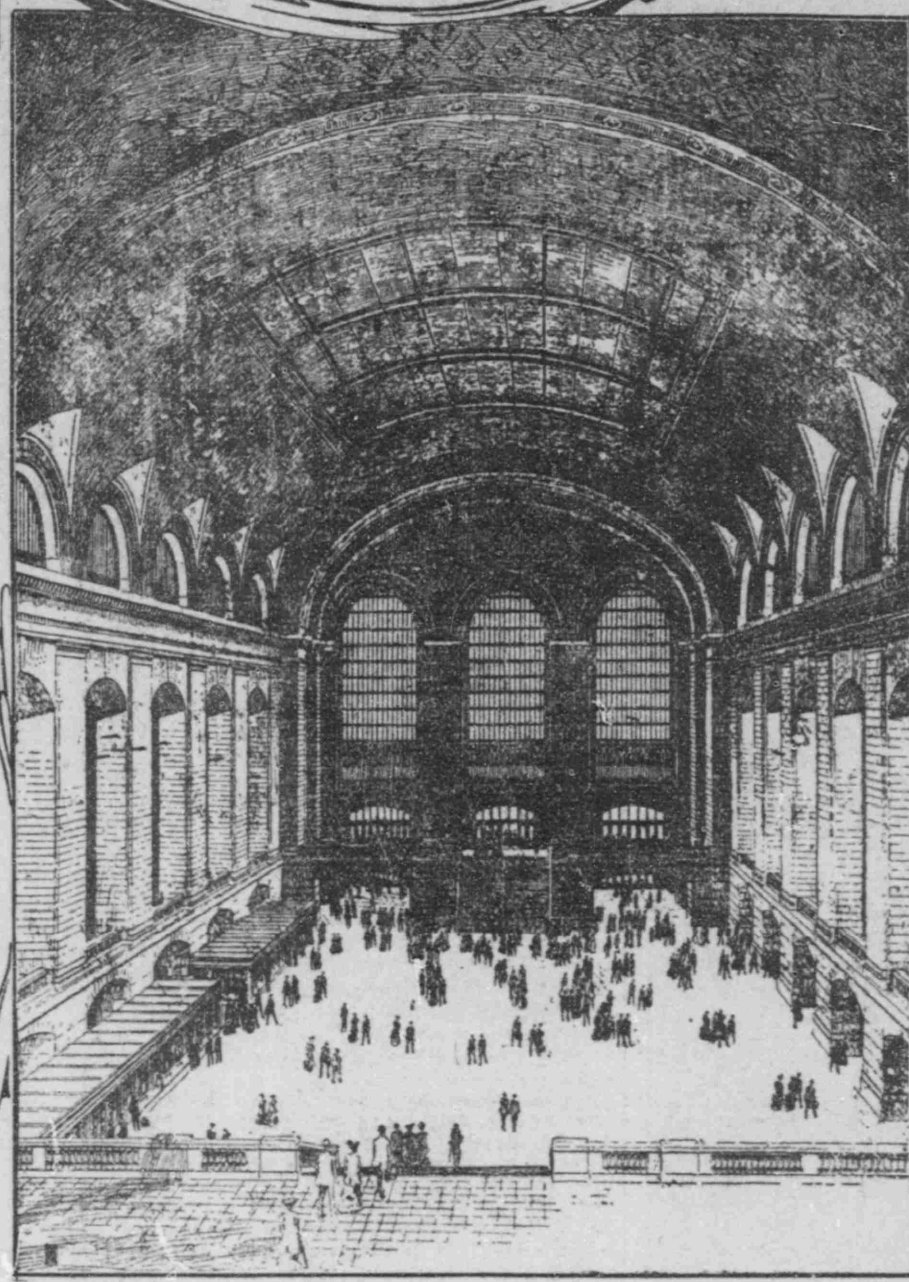
So carefully has this new Grand Central Terminal been planned that, despite its vastness, no incoming or outgoing traveler, no matter how inexperienced, is likely to become confused or to have the least cause for trepidation. There will be no great, high-roofed train-shed, filled with smoke and hissing steam and distracting noises. There will be no jostling and pushing, no moving in opposite directions. The incoming and outgoing travelers will pass to and fro without meeting or mingling.

The principal part of every big railroad terminal is that which is devoted to the use of passengers who are just starting on their journeys. There will be two great waiting-rooms in the new terminal, one for the suburban passengers and the other for those going through to more distant points. Each will be on the level of the tracks that it serves and will be quite distinct from the other. These waiting-rooms are entirely apart from the hurrying crowds. They are literally places of rest—waiting-rooms and nothing else. Passengers need not go through them to get to their trains. Those who are waiting for the suburban trains and those whose tarrying is for the through expresses and flyers need never see each other or mix in going and coming. The entrances and exits and everything else are distinct and separate. This is one of the many unique features of this great terminal.

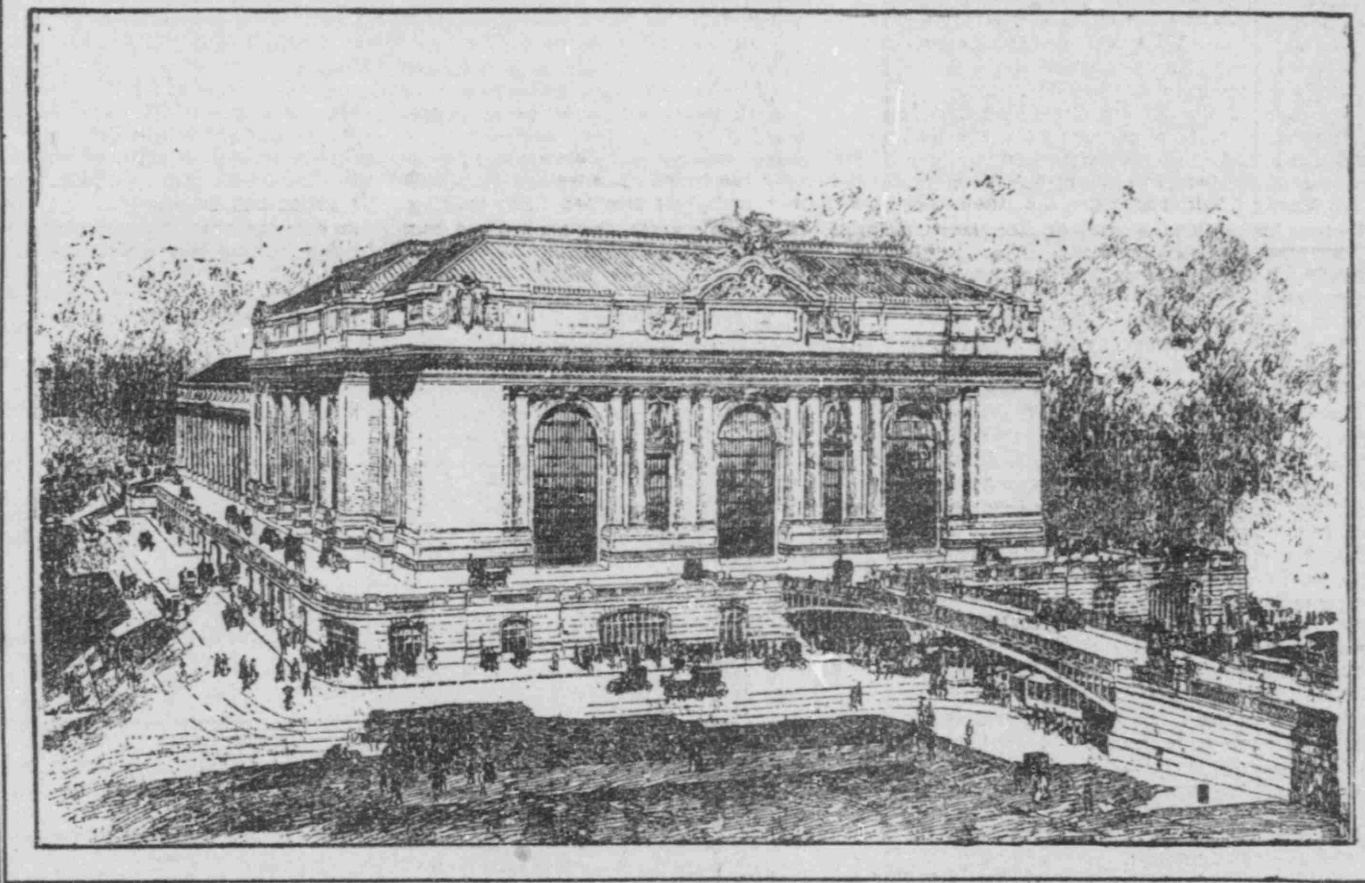
The passenger who is in a hurry and arrives at the station when his train is made up and waiting for him will go direct to one of the other of the two great concourses. Like the waiting-rooms, these are exclusively for suburban travelers and the other for those whose journeys will carry them many miles farther afield. Each of these concourses will have its own ticket offices, information bureaus, baggage checking-places, parcel rooms and all the facilities for travel. The outbound concourse will hold fifteen thousand people at a time without crowding and within the boundaries of the inbound concourse eight thousand people may move about comfortably. As the waiting-rooms will hold about five thousand more, nearly thirty thousand people in all can gather in this enormous station at any one time without crowding in the least.

The essence of the idea that has run through all the designing of this magnificent terminal and has been the subject of years of study on the part of the most expert men in America who are concerned in it is this: To build a station so that anybody—one who has never been in New York, for example, can step from his train and proceed to his destination in the city with the least possible confusion and the utmost tranquility and peace of mind. This hitherto unrealized ideal has been practically achieved at last.

Although this most modern of railroad stations will have all its trains below the street level, when the passenger arrives he will not feel as though he were stepping from his car into a cellar. From a long, highly polished, mahogany-trimmed sleeper that has been his home for a day or a night or longer, he will emerge upon the train platform. But in this new Grand Central Terminal there will be nothing unpleasant about the transition from the elegance of his temporary abiding place. It will be like passing from one handsome apartment into the corridor of another that is larger and more beautiful. The station platform will be on the same level as the floor of the car, which will obviate torn dress skirts and lacerated feelings which are one of the daily features of a journey's ending nowadays. It will be softly lighted; its ceiling will be low and its walls will be colored in restful tones.



A GENERAL VIEW OF THE GREAT OUTBOUND CONCOURSE



NEW MAIN BUILDING ON THE SITE OF THE OLD GRAND CENTRAL

Owing to perfect ventilation the air will be purer and sweeter even than that of out of doors. There will be no confusion, no hissing steam or clanging bells or the thunderous outcry of scores of other trains. The vista down which the passenger will walk will be pleasing to the eye; it will seem like one big long room. He will not pass any baggage and express cars or dodge any trucks or trolley trunks on his way out. The ingenious arrangement of this great terminal has obviated that, and is unique. Before the incoming traveler reaches the baggage cars he will be walking up a gentle slope which will carry him to a level above them. The outward-bound passenger, too, will miss the familiar trucks piled high with luggage. Everything will be brought by subways under the tracks and lifted by elevators to a point opposite the cars in which it is to be loaded.

At the end of the corridor the incoming traveler will pass out into one of the three "kissing galleries." That is what the railroad people call the places where the people wait to welcome their friends. In each of these "kissing galleries" there will be room for double lines of people, each a hundred feet long, which will be ample space for the greeters even when travel is at its heaviest.

Then the incoming traveler may have the choice of many ways of reaching his destination. It is probable that one or two magnificent hotels will form a part of the group of monumental buildings that will rise above the tracks adjacent to the terminal. If the traveler decides to stop at one of these, or some other near by, he may pass directly thither without going up into the street at all. His baggage will be whisked underground and will reach his room almost as quickly as he will.

The new Grand Central will be the center of the most extensive combination of passenger transportation lines in the world, for it will connect not only with the subway but the McAdoo tube to New Jersey, the Belmont tube to Long Island, other subways planned but not yet constructed, and the elevated and surface lines already in existence. It will be an island in the center of a sea of traffic, but one that can be quickly reached by a score of routes.

The third level at the Grand Central Terminal—the lower of the two levels of the net-work of tracks—will be for the suburban trains. The fourth level will be underneath all this. Running east and west under the line of Forty-third and Forty-fifth Streets, will be two subways for handling the inbound and outbound luggage between the baggage-rooms and the trains. Arrangements have been made already so that baggage will be handled through the McAdoo subway and whisked under the river from and to the railway terminals on the other side.

Outgoing travelers need not go to the baggage-room at all to check their trunks even now. All they have to do after buying their tickets is to pass along to the next counter and turn over their tickets and their claim checks from the transfer company. These are sent by pneumatic tubes to the baggage-room where the trunks are checked and the checks sent back to the waiting traveler.

Seventy thousand outbound passengers an hour is the capacity of this stupendous terminal. That is double the maximum carrying power of any other passenger station in the world. Sixty thousand a day is the present average traffic of the Grand Central. From the new terminal

two hundred trains may be sent out every hour if necessary.

This terminal marks a new era in the vertical building of railroads. Modern terminals in the great cities must be below the street level hereafter. This has been made necessary by the high price of New York city real estate and has been made possible by the supplanting of steam by electricity. As an indication of how valuable is the ground upon which this terminal stands in the heart of New York city it may be mentioned that the cost of producing the track space alone on which an 86-foot sleeper may stand, is about \$30,000. The cost of the station building is not reckoned in this.

The exits and the entrances to this stupendous gateway have been planned with extraordinary care. Primarily it was assumed that on some rush occasions the crowd might possibly spread out hesitating for a hundred feet on the pavement on each side of an entrance. That was the basis of calculation in planning the entrances and exits. There are twelve of these. The nearest are one hundred and the farthest nine hundred feet apart. All possibility of crushing and crowding, either going or coming, has been absolutely eliminated.

Another carefully considered thing in the construction of this terminal is the elimination of stairways. Whenever possible gently sloping inclines take the place of steps. An incline is better than a stairway because it is easier for everybody, and particularly so for the very young or the very old. Even the middle-aged man or woman finds it more comfortable. All these inclined ways are located in direct lines of traffic so that the immense crowds that move to and fro will never have to go around any corners or to turn and go back. Everything is so arranged that all possible friction or confusion will be avoided in handling the millions that will sweep back and forth through this gigantic gateway to the city. It will not be necessary to teach people where they should go; they will naturally move in the right direction, which is the principal thing to be desired in guiding a big crowd day after day.

As an illustration of how carefully a single and seemingly unimportant detail has to be considered the little matter of selecting the right color for the uniforms of the employees of the terminal may be mentioned. To the hurried traveler every station has to be a railroad employee. But coming and going continually in the station are in-

numerable persons in uniforms. Some of them are from the big hotels—messengers, porters and the like. It happens many times a day that a perturbed traveler will rush up to one of these and shoot a question at him about the arrival or departure of a train. Nine times out of ten the man in uniform will be unable to answer correctly, if at all, and the traveler will blame the railroad for the ignorance of its servants.

In a thousand and one ways the Grand Central will be of enormous use to even the casual traveler. For instance, there will be a lot of little dressing-rooms which will be rented for a nominal sum. A man can go into one of them and change his clothes without hiring a room in a hotel. This will be of great convenience to those who come to the city to spend but a day. For women the same facilities are to be offered. In their dressing-rooms they can change their traveling gowns for more elaborate costumes if they wish. There will be a rest-room with medical attendance also. This will be centrally placed so that a person can be taken or can go there conveniently and by different ways. There will be no lack of nurses for those suddenly taken ill, and if necessary a sufferer can be carried out to an ambulance without being seen by other people.

When all the great buildings that will cover the surface above this new terminal are completed they will form one of the most wonderfully beautiful groups of structures in the world. All of them will be of what is called a "monumental" character, similar in design to those the railroad has put up already on Lexington Avenue. Along the latter thoroughfare and on Madison Avenue the foundations are

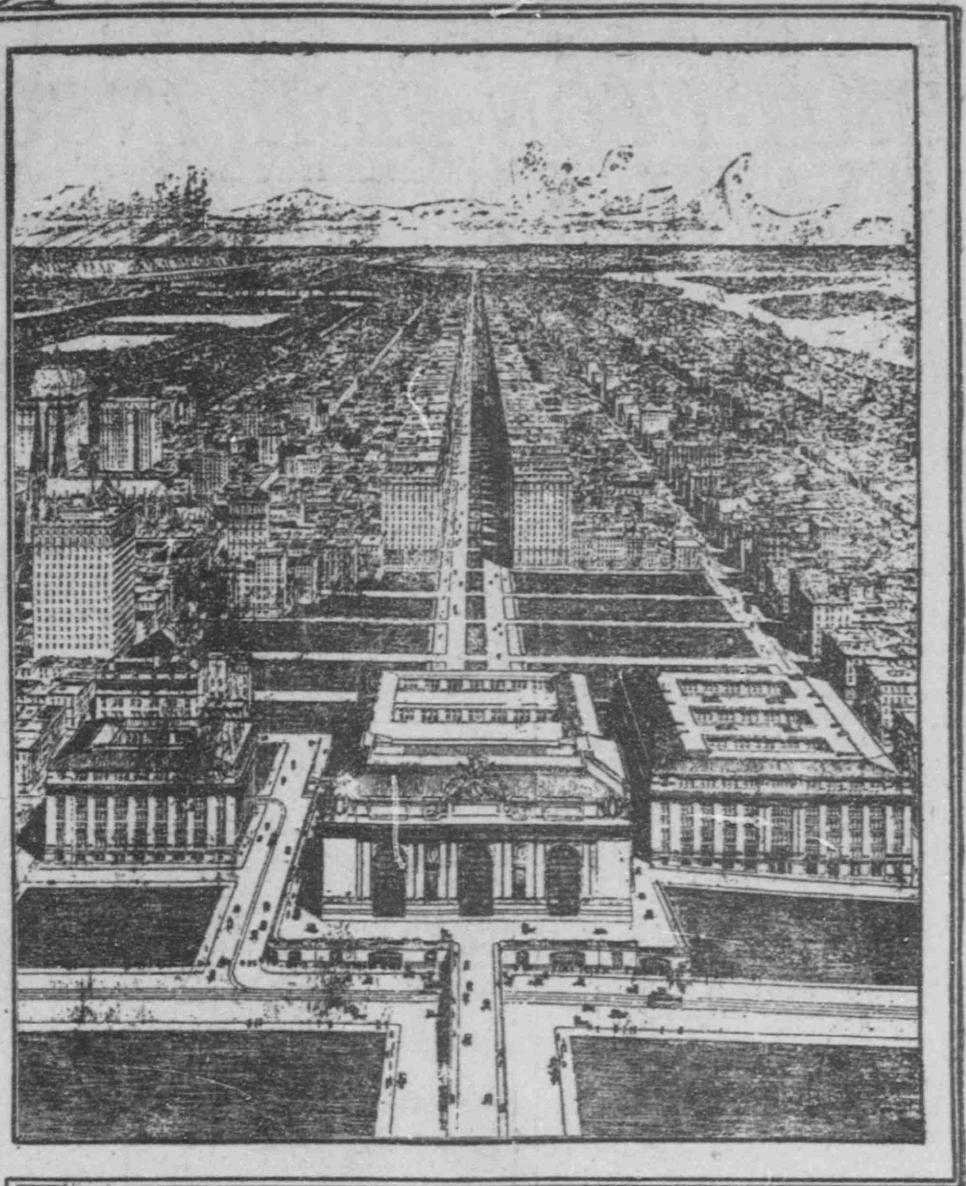
arranged for buildings of greater height. The station building proper will be set back from Forty-second Street and Vanderbilt Avenue so as to provide a wide plaza in front of the portion of the building where passengers will enter and depart. Provision will be made so that this structure may be carried up twenty stories above the station. This would make its roof about a hundred feet higher than that of the Hotel Belmont just across the way.

The cross-town streets from Forty-fifth to Fifty-sixth inclusive, which now come to dead ends at the railroad yard, will be continuous thoroughfares. Park Avenue will be extended north from its present high level at Fortieth Street. It will bridge Forty-second Street and in a broad plaza swing around the great new station structure. Thence, as a new street, it will stretch northward until it joins its present end at Fifty-seventh Street. These changes will revolutionize the character of this part of the city and will draw much of the wheeled traffic from Fifth Avenue—especially the thousands of motor cars that are the daily show of that great thoroughfare morning and afternoon.

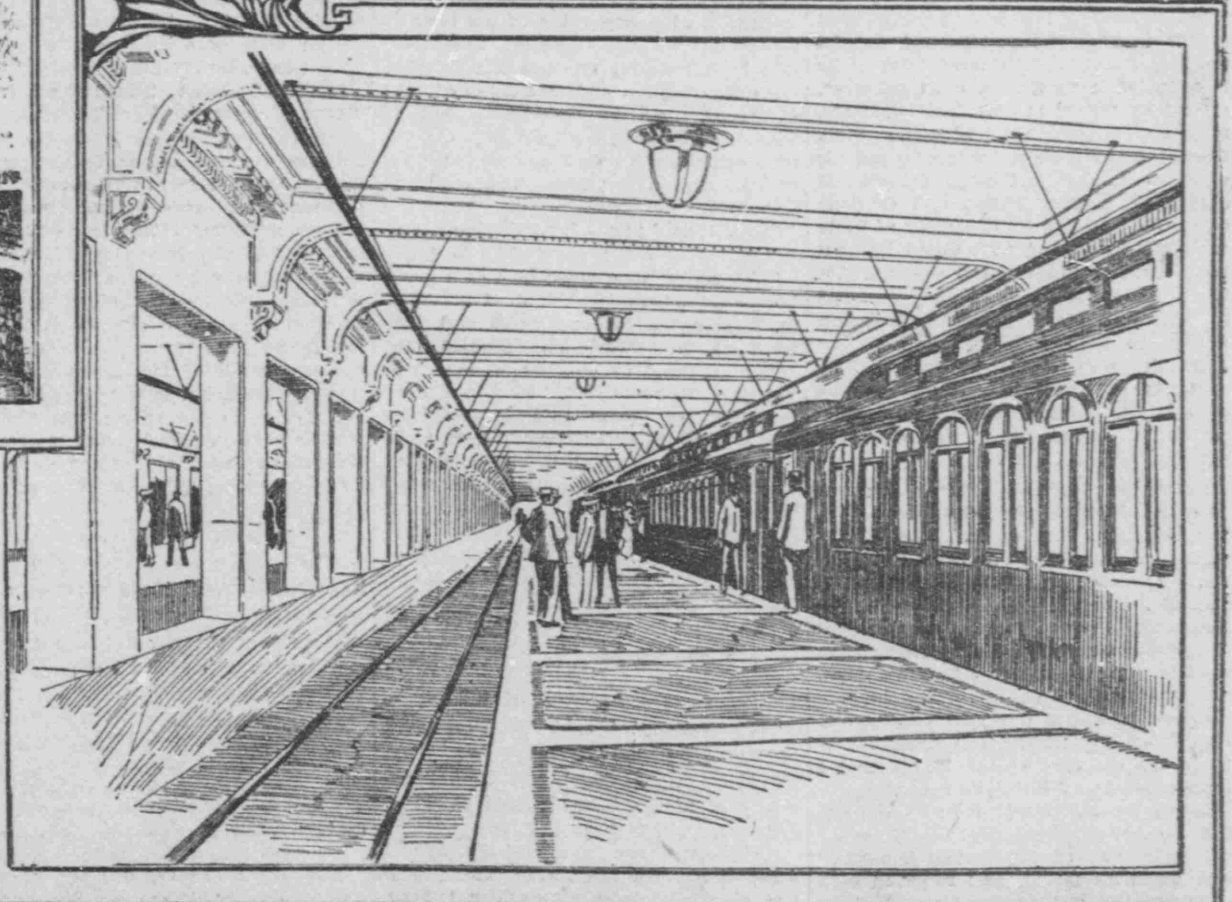
The most wonderful thing about the building of this great terminal is that it

in the approval of the plans. To these men report a vice-president of each of the railroads. These two vice-presidents are directly responsible for the design and conduct of the work. They are assisted by a joint committee, presided over by the terminal manager, consisting of three representatives of each of the railroads who make recommendations and to whom all general plans are submitted by the engineers and architects. The two firms of architects associated together are presided over by an executive of one of them. To him report the numerous designers and draftsmen who prepare all the building plans and specify the character of the material that is to go into the structures.

The engineering organization has charge of the design of the terminal yards, including the substructure of the buildings and the business of the contracts for their erection. The organization is presided over by a chief engineer, to whom report a terminal engineer in charge of the construction work, a terminal engineer in charge of the design of the work and its execution both as to the yard and the buildings, and an engineer of structures in charge of the design and fabrications of the steel. The terminal manager



BIRD'S EYE VIEW OF THE NEW GRAND CENTRAL TERMINAL. THE VACANT BLOCKS TO THE NORTH WILL BE OCCUPIED BY MONUMENTAL BUILDINGS, SOME OF WHICH WILL BE DEVOTED TO THE ARTS AND OTHERS TO COMMERCIAL PURPOSES



ONE OF THE TRAIN CORRIDORS ON THE UPPER LEVEL OF THE GREAT TERMINAL

was carried on without stopping or delaying for a moment the passing to and fro of nearly two million passengers a month. The old train-shed, the vast structure of steel and glass, was taken down without injuring one of the millions of people who moved to and fro beneath while the work was going on. This was a unique engineering feat in itself. Also there was the excavating of practically three million cart-loads of rock and earth, the abandoning of one track after another as soon as a new one was ready to take its place, all without interfering with the daily movement of hundreds of trains.

Probably more engineers from all over the world have viewed the progress of this work than have taken the journey to see the Panama Canal. One of the foremost engineers of Germany said that he would not have dared to undertake it, and would have advised the abandoning of the old terminal entirely while the new one was being built. It was only by the employment of the highest order of operating skill that construction and operation have been made to work harmoniously so that this gigantic task went forward so quietly that a great many people in the metropolis hardly have been aware of it.

It might be imagined that such a colossal task as this would be overshadowed by some great guiding spirit who would outline and be responsible for it all. But a work of this magnitude is too big for any one man. It could be accomplished only by a large collection of men of different kinds of experience, training and ability. It has been conducted by the New York Central under a joint agreement with the New Haven Company, the presidents of the two roads being the court of last resort

has a night and day superintendent to whom report general foremen, master mechanics, the power-house superintendent, the yard-masters, and others engaged in the manual labor of construction. The work is still further divided and subdivided beyond these. Weekly meetings are held by the heads of the various departments at which time the entire programme is reviewed and all vexing problems brought up for consideration. The conclusions reached at these meetings are presented to the committee, of which the terminal manager is chairman, for final action.

For those who like figures the following statistics will be of interest. Two miles of streets that have been closed to traffic for many years will be opened. The old terminal which was built in 1871 and enlarged about ten years ago had a total area of twenty-three acres; that of the new terminal will be seventy-six acres, or an increase of about two hundred and thirty per cent. The old terminal had a capacity of 366 cars; the capacity of the new will be 1,149 cars.

The station building proper will be 600 feet long on the street level, 300 feet wide, and 165 feet high. Below the street level it will be 745 feet long, 480 feet wide and 45 feet deep. Eighty-five thousand tons of steel will be used in the construction of the new terminal.

The main concourse will be entered from Forty-second Street. It will be 120 feet wide, and 100 feet high. The floor level will be about 10 feet below the grade of Forty-second Street. It connects only with outboard trains. The arriving concourse will be on the easterly side of the building. On the suburban track level will be another concourse. Each will have independent exits and entrances.